



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

Address: COMMISSIONER FOR PATENTS

P.O. Box 1450

Alexandria, Virginia 22313-1450

www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/566,708	03/01/2006	Arnaud Helie	Q92887	8999
23373 7590 03/03/2011				
SUGHRUE MION, PLLC				
2100 PENNSYLVANIA AVENUE, N.W.				
SUITE 800				
WASHINGTON, DC 20037				
EXAMINER				
MCGRAW, TREVOR EDWIN				
ART UNIT		PAPER NUMBER		
3752				
NOTIFICATION DATE		DELIVERY MODE		
03/03/2011		ELECTRONIC		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

sughrue@sughrue.com  
PPROCESSING@SUGHRUE.COM  
USPTO@SUGHRUE.COM

# Office Action Summary

**Application No.**

10/566,708

**Applicant(s)**

HELIE ET AL.

**Examiner**

Trevor E. McGraw

**Art Unit**

3752

**Period for Reply** -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 13 December 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-942)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kamishita et al (US 5,064,122) in view of Marelli et al (US 5,224,471).

in regard to Claim 1 Kamishita et al teach a fluid spray head assembly that comprises a fluid spray head (30) has an expulsion channel (see column 3, lines 54-60) with a spray orifice (31) and a spray profile (plurality of 32) are formed in an end wall (top wall of 30 as shown in Figure 3) of the spray head (30), the spray profile (32) comprising non radial spray channels (32 are non radial spray channels) opening out to a central spray chamber (13) disposed directly upstream from the spray orifice (31) and an insert (20) forms an internal nozzle (see where a nozzle effect occurs as fluid flows through "13" past the insert "20" where an area is reduced in size from larger to smaller in """) and is introduced through the inside of the spray head (30) being disposed in the expulsion channel (see column 3, lines 54-60) so as to form a base surface for the spray profile (plurality of 32) where the central axis (X) of the insert (20) is substantially identical to the central axis (Y) of the expulsion channel (see column 3, lines 54-60) and

where the spray profile (plurality of 32) formed in an end wall (top wall of 30 as shown in Figure 3) of the spray head (30) where the central spray chamber (13) is between the spray orifice (31) of the spray head (30) and the insert (20) wherein the insert (20) is formed separately from the spray head (30; "20" and "30" are separate pieces).

Although Kamishita et al as described above substantially teaches the present invention with the exception of where the spray head comprises centering means for centering the insert where the expulsion channel further includes the centering means for centering the insert, and in that the centering means are formed on a surface of the spray head that forms the expulsion channel at a location immediately adjacent to a top end of the insert where the top end of the insert faces the spray profile.

However, Marelli et al teach where the spray head comprises centering means for centering the insert (see where centering means are three flat walls of "3" which center "9" of the insert in Figure 3) where the expulsion channel (11) further includes the centering means (see flat walls of "3" in Figure 3) for centering the insert (9, 10; see also column 3, lines 28-35), and in that the centering means are formed on a surface of the spray head that forms the expulsion channel at a location immediately adjacent to a top end of the insert, where the top end of the insert faces the spray profile.

It would have been obvious to one having ordinary skill in the art at the time the present invention was made to have modified the device of Kamishita et al with the centering means taught by Marelli et al in order to provide a manner in which to better secure the insert under pressurized spraying.

In regard to Claims 2-4, the combined device of Kamishita et al in view of Marelli et al also teach where the centering means comprises at least one projection (see flat surface of "3" in Figure 3 of Marelli) and preferably three, the diameter of the inscribed circle defined by the projections are substantially identical to the diameter of the insert (9, 10; see also column 3, lines 28-35 of Marelli), the expulsion channel (11 of Marelli) includes the three flat surfaces (as shown in Figure 3; see where "11" has flat surfaces of Marelli) that are distributed symmetrically about the channel (11 of Marelli) where the flat surfaces co-operate with the insert (9, 10; see also column 3, lines 28-35 of Marelli) so as to center it relative to the expulsion channel (11 of Marelli) and the access of the expulsion channel (11 of Marelli) to the spray channels (16 of Marelli) are formed between the projections or flat surfaces (see the access openings of "11" bounded by the flat surfaces of "3" in Figure 3 of Marelli).

In regard to Claims 8 and 10, the combined device of Kamishita et al in view of Marelli et al further teach where the spray head of the spray head assembly can be manufactured from a common mold cavity. It is noted that Claim 8 is a product by process claim. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process (See MPEP 2113). Marelli et al is a fluid dispenser device which is characterized in that it includes a spray head assembly of the present invention (as recited in Claims 1; see entire disclosure of Marelli et al.).

In regard to Claim 11, the combined device of Kamishita et al in view of Marelli et al additional teach a fluid spray head assembly that comprises a spray head (30 of Kamishita et al) having an expulsion channel (see column 3, lines 54-60 of Kamishita et al) with a spray orifice (31 of Kamishita et al) and a spray profile (plurality of 32 of Kamishita et al) are formed in an end wall (end wall of 303 of Kamishita et al) of the spray head (30 of Kamishita et al), the spray profile (plurality of 32 of Kamishita et al) comprising spray channels (32 of Kamishita et al) that open out to a central spray chamber (13 of Kamishita et al) that is disposed upstream of the spray orifice (31 of Kamishita et al) where an insert (20 of Kamishita et al) is disposed in the expulsion channel (see column 3, lines 54-60 of Kamishita et al) so as to form a base surface for the spray profile (plurality of 32 of Kamishita et al) forming an internal nozzle and the spray head (30 of Kamishita et al) is configured with an upstream opening to permit the insert (20 of Kamishita et al) to be introduced inside of the spray head (30 of Kamishita et al) from the upstream opening in the spray head (30 of Kamishita et al), and wherein, a central axis of the insert (20 of Kamishita et al) is substantially identical to a central axis of the expulsion channel (see column 3, lines 54-60 of Kamishita et al) and at least one radially projection extending from the inside wall of the expulsion channel (see column 3, lines 54-60 of Kamishita et al) and abutting the insert (centering means of Marelli et al) so as to substantially align the central axis of the insert (centering means of Marelli et al) with the central axis of the expulsion channel (see column 3, lines 54-60 of Kamishita et al) wherein the at least one radial projection extends from the inside wall at a location immediately adjacent to a top end of the insert (centering means of Marelli

et al), wherein the top end of the insert (20 of Kamishita et al) faces the spray profile (plurality of 32 of Kamishita et al) formed in the end wall of the spray head (30 of Kamishita et al) and wherein the central spray chamber (13 of Kamishita et al) is between the spray orifice (31 of Kamishita et al) of the spray head (30 of Kamishita et al) and the insert (20 of Kamishita et al) where the insert (20 of Kamishita et al) is formed separately from the spray head (30 of Kamishita et al).

In regard to Claims 12-19, the combined device of Kamishita et al in view of Marelli et al also teach where the spray channels (32 of Kamishita et al) are non-radial, where at least two additional projections (centering means of Marelli et al) extending from the inside wall of the expulsion channel (see column 3, lines 54-60 of Kamishita et al) and abutting the insert (20 of Kamishita et al) so as to substantially align the central axis of the insert (20 of Kamishita et al) with the central axis of the expulsion channel (see column 3, lines 54-60 of Kamishita et al) and where the diameter of an inscribed circle defined by the three projections (centering means of Marelli et al) is substantially identical to a diameter of the insert (20 of Kamishita et al) and the three projections are flat surfaces (see flat surfaces of centering means taught by Marelli et al in Figure 3) distributed symmetrically about the central axis of the expulsion channel (see column 3, lines 54-60 of Kamishita et al) where access from the expulsion channel (21) to the spray channel (32 of Kamishita) is between the projections (flat wall surfaces of "3" of Marelli et al that constitute the centering means as shown in Figure 3) and the spray head (30 of Kamishita et al) is coupled to a dispensing member (see abstract of Kamishita).

With further regard to Claim 19, the combined device of Kamishita et al in view of Marelli et al teach where the centering means has three projections (see centering means of Marelli et al in Figure 3), the diameter of the inscribed circle defined by the projections being substantially identical to the diameter of the insert (20 of Kamishita et al).

Claims 5-7 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kamishita et al (US 5,064,122) in view of Marelli et al (US 5,224,471).

In regard to claims 5-7 and 9, the combined device of Kamishita et al in view of Marelli et al as taught above discloses the claimed invention except for the following: a central axis of the insert being offset from the central axis of the expulsion channel by a distance of less than 0.08 mm, and preferably less than 0.03 mm; a spray chamber having a diameter of 1 mm; a spray orifice having a diameter of 0.3 mm; and the standard deviation of the offset between the central axis of the insert relative to the central axis of the expulsion channel being less than 0.05 mm and preferably less than 0.02 mm.

It would have been an obvious for having ordinary skill in the art at the time the present invention was made to try to offset the central axis of the insert from the central axis of the expulsion channel by a distance of less than 0.08 mm, and preferably less than 0.03 mm, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. and it appears that the invention would perform equally well with



the central axis' not being offset from one another where offsetting the central axis' would provide a benefit that would ensure a spray would be directed past the projections through the expulsion channel.

It would have also been an obvious matter of design choice to provide for a spray chamber having a diameter of 1 mm and a spray orifice having a diameter of 0.3 mm as providing for such dimensions of the spray chamber and spray orifice, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. and it appears that the invention would perform equally well if the dimensions of the spray chamber of 1 mm and the spray orifice of 0.3 mm were larger where the sizing of such benefits in atomization of a spray fluid through the restricted opening for directing the fluid.

It would have been a further obvious matter of design choice to provide for a standard deviation of less than 0.05 mm and preferably less than 0.02 mm for the offset between the central axis of the insert relative to the central axis of the expulsion channel, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art and it appears that the invention would perform equally well without an offset between the insert and expulsion channel where offsetting the central axis' would provide a benefit that would ensure a spray would be directed past the projections through the expulsion channel.

***Response to Arguments***

**Claim Objections**

Examiner withdraws the objection to the claims in view of Applicant's amendment to line 16 of Claim 11 that deletes the word "in" so that line 16 reads as "profile formed in the end wall of the spray head" and eliminates confusion as to what Applicant intends to recite.

**Rejection under 35 USC § 103**

Applicant's arguments with respect to claims 1-19 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Graf et al (US 5,203,840) drawn to a fluid dispensing apparatus.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Trevor McGraw whose telephone number is (571) 272-7375. The examiner can normally be reached on Monday-Friday (2nd & 4th Friday Off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Len Tran can be reached on (571) 272-1184. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/T. E. M./  
Examiner, Art Unit 3752

02/26/2011

/Dinh Q Nguyen/  
Primary Examiner, Art Unit 3752